

Alphonse Milne-Edwards, who on some points is the greatest ornithological authority that has ever lived. We are then told of an Oxford undergraduate who "took a walk with his gun in Bagley Wood and brought home fifty different specimens which he carefully stuffed." "He had a museum," it is added, "of several hundreds." We are not told whether this Oxford undergraduate's conduct is worthy of praise or blame, nor would it much signify, for the writer is evidently confused in his notion of "specimens" and "species." To kill specimens of fifty different *species* in one day and in one wood, though not easy, could no doubt be done in many places, but it would be hard to kill fifty birds that were not different *specimens*! Would the writer also be surprised to learn that "a museum," or a collection, as people nowadays more humbly style it, "of several hundreds," was some fifty years ago by no means uncommon, and that of late years private collections include not only thousands of specimens, but thousands of species?

But now comes the most astonishing assertion of all. We are told that "Mr. Morris describes more than twelve hundred birds," and that there may be no mistake in the writer's meaning, he subsequently repeats the statement in this wise: "Of the twelve hundred British birds, a good many are represented by a single stray specimen," and so on! The ornithologists of this country have hitherto been deemed by their continental brethren somewhat too hasty in enrolling as "British" every chance waif from foreign lands and seas that has had the ill luck to show itself (and of course be shot) within the limits of the United Kingdom, and we have never understood that on the most liberal interpretation of the expression, "British birds," the number has exceeded four hundred. How blind and inefficient have they been when they have omitted more than two-thirds of the species that occur here! It is really to be hoped that the writer of the leading article on English birds in last Thursday's *Times* will bring them to a due sense of their neglected duties by furnishing a list of the 800 species whose rights of citizenship have been so shamefully ignored, and if he will at the same time say in which edition of Mr. Morris's work "more than twelve hundred" British birds are described, he will possibly contribute to a more comfortable understanding of the matter, for Mr. Morris has hitherto been supposed to follow very closely the late Mr. Yarrell in the information he gives, so that when the latter in his last edition included 354 species, the former a few years later made the number 358!

There are many other assertions in the same article which excite a degree of amazement inferior only to the last particularised, and we have heard persons suggest that the writer must have been all the while perpetrating a solemn joke.

EDISON'S ELECTRIC LIGHT

THE *Times* New York correspondent gives some interesting details in Monday's paper of Mr. Edison's new form of electric lighting and the steps by which he was led to its discovery. So far the light has withstood every test that has been tried, and so confident do the public seem that success has been attained at last, that the shares of the Edison Company have risen from 20 dollars to 3,500 dollars.

The Philadelphia correspondent of the same journal gives some further information in yesterday's issue. Probably 200 people make up the population of Menlo Park, we are told, nearly all Edison's workmen and their families. He gets an income of 40,000 dollars to 50,000 dollars a year from his various inventions, and he spends it all, the most of it for machinery and wages, and the balance in charity. The correspondent then gives some interesting details concerning Mr. Edison, his habits, his enthusiasm, and his relations with his numerous employés. There is no

discipline enforced or any apparent time-table for work, yet with all hands it seems a labour of love, and if you pick out from the crowd the grimmest and most woe-begone of the whole party of overworked alchemists it will be Edison himself. It appears to have been the system at Menlo Park, as with the alchemists of old, to do most of the work at night, and it seems the regular habit of Edison and his chief subordinates to work straight through the twenty-four hours without stopping, until tired nature compels them to drop down in any handy place and go to sleep. "We went there," the correspondent writes, "hoping that Edison had succeeded, but nevertheless sceptics, and we came away thorough believers. His lamps were burning when we arrived, and they burnt continuously until our departure, excepting from half-past four to half-past five P.M., when about an hour's time was taken in putting in a new generator to do the work, which he had just finished and desired to try. During the daylight we could see the lamps burning, supplied by the first generator, and perceived that the little carbon loop or horseshoe giving the light remained intact. After dark, when the second generator went to work, we saw for three hours the lamps successfully burning as a complete substitute for gas for every purpose for which illumination was necessary at Menlo Park. The gas jets were idle, being put out of use by the steadier and more genial glow of the electric light. We ate our supper by it in the little restaurant that has been established at the Park, and I sat down in Edison's office under two of his lamps attached to a gas bracket and wrote the rough draft of the telegram sent to the *Times*. In this room a telegraph operator worked in a corner with an Edison lamp in a movable table stand illuminating his work. Down stairs his bookkeeper was paying off the hands by the aid of two more electric lights on a gas bracket. Out in the roadway in front of the building two street lamps were set up with the Edison light in full operation. In his workshop the engineer was running his engine and a couple of men watching the operation of the new generator by the light of more Edison's lamps, while in the laboratory some fifteen of them were giving light for various operations, and downstairs a young man sat at the regulator, and, watching another light, by the aid of the galvanometer, kept the flame steady, just as the regulator is worked constantly in the gas-house to adjust the gas pressure, so that it will compensate for turning lights on or off throughout the town. It was between seven and eight o'clock on a dark winter evening, and the electric light had put into disuse both the gas jets and the petroleum lamps that were in profusion around. I visited four dwellings in the village and saw the Edison lamps doing the work of illumination for all household purposes in each of them. In Edison's own house, where he had at least a dozen of them, we remained over half an hour, and I shall never forget the glee with which Edison listened to the reading of a newspaper slip, wherein an ambitious 'expert' offered to forfeit 100 dollars for every lamp that Edison could keep burning over twenty minutes."

NOTES

ON Friday, the 9th inst., the St. Andrew's University Court agreed to report to the Queen in Council in favour of an application by Prof. Swan to be permitted to retire, on the usual retiring allowance, from his Chair of Natural and Experimental Philosophy in the University, on the ground of failing health.

MR. E. W. COOKE, R.A., F.R.S., whose death at the age of sixty-nine years, took place at Groombridge on the 4th inst., deserves some notice in these pages for his connection in various ways with science. From his boyhood he had the keenest interest in natural history, and was probably one of the first amateur horticulturists. He was connected with most of our scientific societies, and was an early member and constant

attendant at the meetings of the British Association. His first artistic work was botanical, the drawing of many hundred of the illustrations to London's "Encyclopædia of Plants," all drawn from living specimens. The professional work of Mr. Cooke as an artist was throughout an advancement of science through a channel which we have often had occasion to point out, is generally too independent of the claims of science, and suffers accordingly. Mr. Cooke's representations of natural objects, of plants and animals and rocks, were always scientifically accurate, and his coast scenes are in themselves a geological study. He was always ready to help other artists whose ignorance of natural science was apt to lead them into ludicrous blunders. He was, we believe, one of the first who ever attempted to grow ferns and tropical plants under conditions similar to those under which they are found in nature. Both at Kensington and at Tunbridge Wells his fernery and tropical garden were masterpieces in their way. For his eminence as a horticulturist and for his contributions to geological science by his series of pictures and drawings illustrating the principal geological features of the British Islands, Mr. Cooke was, in 1863, elected a Fellow of the Royal Society. His series of drawings of "Grotesque Animals," published a few years ago, afford a remarkable example of his intimate knowledge of comparative anatomy, as well as of his sense of humour. Mr. Cooke counted among his friends nearly all the leading men both in science and art.

MR. WILLIAM ALEXANDER FORBES, B.A., F.Z.S., Scholar of St. John's College, Cambridge, has been appointed by the Council Prosector to the Zoological Society of London in succession to the late Prof. Garrod. Mr. Forbes, who is already well known for his contributions to scientific literature, obtained a first-class in the Natural Sciences Tripos at the late examination at Cambridge, and was designated as specially distinguished in the sciences of comparative anatomy and zoology.

WE understand that, at the suggestion of several practical teachers of botany, a new piece of ground at the Royal Gardens, Kew, will, during the ensuing season, be set apart for the study of botany, and that students will, under certain regulations, be able to carry home specimens for examination. Papers recently read at the Chemical Society by Mr. Church on the respiration and transpiration of albino foliage, and at the Linnean Society by Mr. Marshall Ward on the embryology of phanerogams, were in both cases founded on observations made in the laboratory.

THE *Journal of Botany* announces the death, at the early age of twenty-eight, of one of the most promising of the younger generation of physiological botanists, Dr. H. Bauke, of Berlin. His researches on cryptogams, and especially on the phenomenon of bilaterality in the prothallia of ferns, gave promise of a brilliant future.

THE Fourth Annual Report of the Johns Hopkins University contains much that is of great interest. It gives a sketch of the foundation and plan of instruction of the University, showing how the latter has been based on the best ideas as to what ought to be the functions of a university. The system of fellowships at the Johns Hopkins institution is one calculated to encourage and call forth the best energies of the Fellows, and in the short career of the University the success of these fellowships has been fully shown. The University has the use of the magnificent library of the Peabody Institute of Baltimore, and in its own various laboratories much good work is being done. The University has contrived happily to combine teaching and research in such a way as to give students real help and yet leave the teachers ample time to carry on original work. The *American Journal of Mathematics* and the *American Journal of Chemistry* both emanate from this Institution, while special publications contain the results of biological work, and a long list of papers in various departments by members of the University is

appended to the Report. We have also a long list of apparatus for scientific researches involving accurate measurements in the physical laboratory, and of some of the most important apparatus in the biological laboratory. Altogether from this Report it will be seen that the Johns Hopkins University is doing its best to carry out the noble purpose of its founder.

FROM the Twelfth Annual Report of the Peabody Institute of Baltimore, we see that the magnificent new buildings are now complete and occupied. It now forms one of the best equipped centres of culture in the United States.

IN the *Bulletin* of the Paris Anthropological Society (tome ii. fasc. 3) M. J. Geoffroy gives a *résumé* of his great work on the knowledge and denominations of colour, in which he attempts to controvert the views of Magnus and Geiger, and those of Mr. Gladstone, which ascribe colour-blindness to Homer. On the grounds taken by these writers he insists that we should be equally justified in asserting that Corneille, La Fontaine, and others who happen not to mention in their works any one special colour, must have been blind to it; he considers that the delight taken by savages in bright colours is a sufficient proof that the sense of colour is not due to culture.

IN the same number M. de Jouvencel draws attention to the curious circumstances that the Latin races by preference take the right side, where the Teutonic races, including our own, and that of Scandinavians, take the left. With regard to the former, he finds a sufficient explanation in the superstition of the Romans, who deemed all omens favourable which manifested themselves on their right side, and *vice versa*; while the barbarian enemies of Rome may be assumed to have regarded as favourable to themselves whatever the Romans accepted as of evil portent.

The Saxon races as masters of the sea and pioneers in the laying of railways, have imposed their own rules of the left side on the French and other Latin nations, who, however, still in driving, riding, &c., keep to the practice of their progenitors.

M. ZABOROWSKI recently communicated to the Paris Anthropological Society his discovery, on the banks of the Lower Vistula, of certain sepulchral vessels of a kind never before described. At the depth of 50-80 centimetres below the surface he found cinerary urns filled with bones, in the midst of which were various objects in bronze, iron, and bone, and over each urn there was a cover, like an inverted bell, resting in some cases on a kind of stand, or plateau. He proposes to give to these singular urns the name of *tombeaux sous cloches*; of which outline drawings with full description of their form and size are given at pp. 337-8 of the *Bulletin* (t. ii. fasc. 3).

THE *North American Entomologist* for August, 1879, contains a paper by Mr. A. R. Grote "On the Neuration in certain Genera of *Pyrallidæ*," illustrated by a plate with outline figures of the neural characters of fourteen genera, which should prove of great service to students of *Lepidoptera*.

MR. T. R. ARCHER BRIGGS, of Plymouth, announces the early publication of a Flora of Plymouth, including the Flowering Plants and Ferns growing within a distance of about twelve miles from the town. The almost unrivalled critical knowledge of our native plants possessed by Mr. Briggs will render this a valuable contribution to geographical botany.

MESSRS. D. M'ALPINE and A. N. M'Alpine announce the publication of a Biological Atlas, being a guide to the practical study of plants and animals, illustrating the characters of typical forms by drawings of the object, dissections, microscopic preparations, and diagrams, with explanatory text, specially designed for the London University, Science and Art, Medical, and other examinations, and for use in schools and colleges. The Atlas will consist of 24 plates, containing 423 coloured figures and

diagrams, and is to be published by Messrs. W. and A. K. Johnston.

THE Göttingen Royal Society of Sciences offers a prize of 50 ducats for the best treatment, by new researches, of the question as to the processes of development of the adult echinoderm. In addition to what is known of the embryonal development of echinoderms, it must specially be shown how the animal grows from the larva form to the completed system of organs. It is open to competitors either to examine a characteristic kind of development-process in all its features, or by exhibiting the development of different forms, to establish a common behaviour for the whole; in the latter case, the chief agreements and divergences in the formation of the organic system in different forms of echinoderms must be indicated from their earliest occurrence. The Society re-propose their question as to the nature of the *unpolarised light-ray*, researches being desired which will bring conceptions as to natural light of any source, near, in definiteness, to those which theory associates with polarised light. Papers on these subjects have to be sent in before the end of September in 1881 and 1882 respectively.

THE Reale Istituto Lombardo offers prizes of various value in connection with the following among other subjects:—The climatology of Italy; Critical history of the telephone; Œnology, especially in ancient Italy; The nature of miasma and contagion; Motor centres of the cerebral cortex; Etiology of cretinism and idiocy; Demonstration by experiments, whether the generative matter of hydrophobia is a virulent principle or an organic germ; Elucidation of some facts of the macro- or microscopical anatomy of the human brain. Particulars with reference to these will be found in the *Rendiconti* of the Institute (vol. xii. fasc. xvii.—xviii.).

A GERMAN translation of Schiaparelli's work on the planet Mars has just been published by Herr Georgi, of Leipzig.

MR. SHRUBSOLE asks us to say that he will exhibit specimens of the diatoms he states he has found in the London Clay at the annual meeting of the Geologists' Association on February 6.

A SEVERE earthquake was felt at Coire, in the Grisons, early on the morning of the 7th inst.

DURING these last twenty years numerous complaints have been published or sent to the public authorities with regard to the organisation of the observatory of Algiers. This unhappy state of things has now come to an end. This establishment has been placed under the authority of the rector of the Academy, and a lectureship in astronomy has been created. The same decree has organised the several preparatory schools recently created by law. An Oriental Section has been organised, and the lectureship for Arabic existing in Algiers, Oran, and Constantine have been connected with it. Chairs for Mussulman Law, African Geography, African Antiquities or History, have been created by the same decree. M. Pomel, one of the Senators for the Algerian provinces, has been appointed director of the School of Sciences and Professor of Mineralogy in the same schools. He will be obliged to resign his senatorship.

MR. C. LLOYD MORGAN, Associate of the Royal School of Mines, F.G.S., Lecturer on Science and English Literature at the Diocesan College, Rondebosch, Cape Town, has been appointed Examiner in Natural Science at the Cape Town University.

WE have received the first number of the *Angler's Note-Book and Naturalists' Record*, a repertory of fact, inquiry, and discussion on field sports and subjects of natural history. It is a neat small quarto, and might serve a very useful purpose; the

first number, however, contains far too many extracts from other journals, many of them years old. The publishers are Satchell and Co.

THE *New York Herald* articles and telegrams relating to the new Edison light have created much sensation in Paris, and caused a fall of 3/4 in the shares of the Compagnie d'Eclairage et de Chauffage par le Gas. It is said that the judicial authorities are engaged in an inquiry directed against the *Figaro*, which published the news with aggravating embellishments.

M. FERRY has taken an important resolution obliging students to make use of the magnificent opportunities afforded by the Jardin des Plantes. The professors of botany and natural history of the schools of medicine and pharmacy have been authorised to deliver their lectures in the amphitheatre of that establishment. A special commission has been created consisting of these professors and the professors of the museum. A new chair has been instituted of vegetable physiology, and M. Dehairain has been appointed professor. M. Dehairain has edited during a series of years the *Annuaire du Progrès des Sciences*, written by himself and a large staff of contributors selected from among the most popular scientific writers.

THE new number of the *Proceedings* of the Berwickshire Naturalists' Field Club is as varied and interesting as usual, with papers on the natural history, antiquities, folk-lore, and local history of the Border.

THE new volume of the "Year Book of Facts in Science and the Arts" (Ward, Lock, and Co.) is no improvement on its predecessor; it is solely the work of unintelligent scissors and paste, and no more represents the science of the year than a few clippings from a third-rate illustrated journal would do the art.

DR. SCHOMBURGK, the director of the Botanic Garden, Adelaide, has issued a little pamphlet "On the Naturalised Weeds and other plants in South Australia." As this writer truly says, "From the past and present constant intercourse with Europe and other parts of the world, and the abundant importation of seeds into Australia for agricultural and horticultural purposes, it is no wonder that a very great number of the weeds most troublesome at home are now naturalised in South Australia." It is shown that a point of interest might occur whether the altered circumstances which now seem to be so favourable to the growth of the acclimatised weeds will prove permanent, or, by a change effected by over-stimulation, whether degeneracy and subsequent extinction might not follow. Such an effect, however, is not yet observable, the growth being quite as luxuriant as they were eighteen to twenty-five years since. The list contains the names of many of our best, or worst, known weeds, some of which have so firmly established themselves that it is almost impossible to eradicate them. Thus the extension of *Onopordium acanthium* was so rapid that the Legislature passed an Act in 1862 for preventing the further spread of this plant as well as those of *Carduus marianus*, and *Xanthium spinosum*. "According to the Act every owner or occupier of land upon which, or upon the adjacent half of any road, the above-mentioned thistles are growing, is obliged in twenty-one days after notice, signed by any chairman of a Road Board or District Council, has been served upon such owner, to destroy the thistles on his land; otherwise he is liable to a penalty not exceeding ten pounds. The Government must, on all unoccupied Crown lands, employ the necessary labour to eradicate the thistles. This stringent measure it is true has decimated the plants, but without effecting the object desired. Although thousands of pounds have been spent for the purpose, the destruction of thistles is generally commenced too late to prevent the dispersion of the developed seed." The pamphlet, though composed of only thirteen pages, appears to have been hurried through the press,

for numerous mistakes occur in the spelling both of the common as well as of the scientific names; thus we have Spury for Spurry, Cormwell for Gromwell, Torn-apple for Thorn-apple, *Hordeum murianum* for *H. murinum*, *Anthoxanthum oderatum* for *A. odoratum*, &c.

IN four bone-caves of Upper Franconia different proportions of mammalian remains are met with ("Some Franconian Cave Faunas," by A. Nehring, in Report of Proceed. of the Imperial Geolog. Instit. Vienna, August 31, 1879). The bones of the older layers are darker in colour, and belong to the collared lemming and other decidedly arctic species. Bats are absent. This fauna probably existed at the end of the glacial period, when there were as yet few forests, or none, in the surrounding region. The bones belonging to a later period are lighter in colour, and indicate a post-glacial forest-fauna, mingled with a few arctic species. Bats requiring a temperate climate are abundant. These more delicate remains may have been brought to the caves by owls. This later cave-fauna of Upper Franconia agrees with that of Balve in Westphalia.

IN the United States a series of experiments has been made by the Ordnance Department in the use of the telephone to assist in determining the time of flight of small-arm projectiles, which has hitherto been a matter of great difficulty at long ranges, owing to the impossibility of seeing them strike. One telephone was placed within a few feet of the gun, and the other (both being provided with Blake's transmitters) in the shelter, about thirty feet in front of the target. The telephone being placed to the ear, a stop-watch, beating fourths of a second, was started at the moment of firing, and stopped on the bullet striking. The observations founded on a large number of experiments never differed more than a quarter or half of a second from each other, the slight delay in starting the watch being neutralised by the delay in stopping it. It was found that the time of transit was affected by the wind, being shortened by a rear and lengthened by a head wind.

FROM the Canaries we continue to receive the *Revista de Canarias*, which we are pleased to see has reached its twenty-third number, and still continues to devote a fair amount of its space to science.

A SECOND edition of Mr. W. H. Penning's "Text-Book of Field Geology" has been published by Bailliére, Tindall, and Cox, with several additions and improvements.

IT is stated that a seam of exceedingly good coal has been opened up on the Irwin River in Western Australia. Its existence appears to have been known, though no attempt had been previously made to work it.

M. COCHERY, Minister of Postal Telegraphy, has asked from the French Parliament a credit of 320,000*l.* for establishing a subterranean telegraphic communication between the principal French cities and Paris. This resolution has been taken in consequence of the number of interruptions experienced in the aerial service during the present winter. For days the communication with Marseilles was conducted by a single line.

THE number of the *Transactions* of the Asiatic Society of Japan which has just come to hand, contains several papers of interest from different points of view. Among these may be mentioned "Analyses of Surface Waters in Tokiyo [Yedo]" by Mr. R. W. Atkinson; "The Chemical Industries of Japan," by the same; "A History of Japanese Art," by W. Anderson; and notes by the Rev. J. Summers on Osaka, usually known to the outer world as the commercial capital of Japan.

THE additions to the Zoological Society's Gardens during the past week include a Brown Bear (*Ursus arctos*), three — Snakes (*Tropidonotus tigrinus*) from Japan, presented by Messrs. James Veitch and Sons and Mr. Chas. Maries; an Arabian Gazelle (*Gazella arabica*) from Arabia, presented by Miss M.

Murray; two Corean Pigs (*Sus sp. inc.*) from the Island of Quelpart, Corea, presented by Dr. Sydney Ringer; a Japanese Hawk Eagle (*Spizaetus orientalis*) from Japan, presented by Mr. Harry Pryor, C.M.Z.S.; two Common Gulls (*Larus canus*), British, presented by Mr. George Weaver; a Robben Island Snake (*Coronella phocarum*), four Rufescent Snakes (*Leptodira rufescens*) from South Africa, presented by the Rev. G. H. R. Fisk, C.M.Z.S.; a Rhomb-marked Snake (*Psammophylax rombeatus*) from South Africa, presented by Mr. Eustace Pillans; three Oyster-catchers (*Hamatopus ostralegus*), three Brant Geese (*Bernicla brenta*), British, purchased; a Yellow Conure (*Conurus solstitialis*) from Guiana, received in exchange.

OUR ASTRONOMICAL COLUMN

WINNECKE'S COMET.—The only known comet of short period due at perihelion within the present year is that discovered by Winnecke in March, 1858, which was soon found to be identical with the third comet of 1819, detected by Pons at Marseilles on June 12, having completed seven revolutions in the interval. Encke had shown that the observations in 1819, extending over thirty-six days, were best represented by an ellipse, with a period of 2052 days, or 5^h 618 years, but it is not upon record, so far as we know, that any serious attempt was made to recover the comet when with Encke's period it might be expected to be near perihelion, and thus it remained for Winnecke to find it again after a lapse of nearly forty years. The perturbations by Jupiter and Saturn during this period have been calculated by Clausen, with the view to fix the precise value of the mean motion at the perihelion passage in 1858. Another revolution would be completed in November, 1863, but the comet's track in the heavens under that condition is so unfavourable, that no observations were secured. At the next return in 1868, however, it was well observed, and again in 1875. The calculations for this comet are understood to be in the hands of Oppölzer, of Vienna. With his elements for 1875, the next perihelion passage, without having regard to perturbations which must be small in the present revolution, would fall at the beginning of December next, in which case, the comet's apparent track must be again unfavourable one; indeed it seems questionable if it will be possible to obtain observations. The most likely time will perhaps be late in January, but the intensity of light will then be very small.

Oppölzer has suggested that the comet imperfectly observed by Pons in February, 1808, in the constellation Ophiuchus, may have been identical with Winnecke's, if it were in perihelion on or about April 12. The following particulars relating to the comet of 1808 appear to have been obtained from Pons's papers, and were communicated to Schumacher by Inghirami:—"La comète du 6 février 1808, est une des comètes qui ont échappé aux astronomes sans pouvoir en calculer les éléments à cause que l'on n'en a pu avoir que quelques positions très-douteuses par méprise avec d'autres nébuleuses. Elle était très faible et difficile à voir. La nébulosité était ronde, elle s'étendait à peu près un degré et on y soupçonnait par intervalle un très faible noyau en deux parties. Son mouvement était assez rapide vers le sud et l'on n'a pu l'apercevoir que 3 jours parce que la clarté de lune était très-forte, de sorte que malgré de recherches très-opiniâtres, on ne pouvait pas même la soupçonner le 10." There is then given a "Configuration renversée du 3 février vers les 5*h*, du matin dans le grand chercheur qui à peu près a 3 degrés de champ;" and it is added: "Les deux nébuleuses marquées dans la figure sont sur le ventre d'Ophiuchus un peu au-dessous de l'Equateur." Oppölzer identifies the nebulae as Nos. 9 and 10 of Messier. In Zach's *Correspondenz* the comet is called a very small one, and nothing is said as to its rapid motion. It is evident that if the statement forwarded to Schumacher is the correct one, the comet moving quickly and with an apparent diameter of nearly a degree must have been in near proximity to the earth. Winnecke's comet in perihelion, on April 12, would have had about the following positions:—

Feb. 5 at 16	...	R.A. 237 56	...	Decl. - 7° 0'	...	Dist. 1' 04"
" 8 at 17	...	" 241 39	...	" - 7 31	...	" 1' 01"

So that the motion, though southerly, would be but small. The identity of the comet of 1808 with Winnecke's comet is therefore at least doubtful.